इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 11407 (1986): Implementation of the 7-bit coded character set and its 7-bit and 8-bit extension on 9 track 12.7 mm magnetic tape [LITD 20: Indian Language Technologies and Products]

"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

Made Available By
Public.Resource.Org

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS : 11407-1986
ISO 962-1974

UDC 681·327·636:681·3·042

Indian Standard (Reaffirmed 2001)

IMPLEMENTATION OF THE 7-BIT CODED CHARACTER SET AND ITS 7-BIT AND 8-BIT EXTENSIONS ON 9-TRACK 12.7mm MAGNETIC TAPE

[ISO Title : Information Processing — Implementation of the 7-Bit Coded Character Set and Its 7-Bit and 8-Bit Extensions on 9-Track, 12,7mm (0.5 in) Magnetic Tape]

Computers, Business Machines and Calculators Sectional Committee, LTDC 24; Computer Hardware Subcommittee, LTDC 24:1 [Ref : Doc : LTDC 24 (1013) F]

National Foreword

This Indian Standard which is identical with ISO 962-1974 'Information processing — Implementation of the 7-bit coded character set and its 7-bit and 8-bit extensions on 9-track, 12,7 mm (0.5 in) magnetic tape', issued by the International Organization for Standardization (ISO), was adopted by the Indian Standards Institution on the recommendation of the Computers, Business Machines and Calculators Sectional Committee and approved by the Electronics and Telecommunication Division Council.

Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.

Cross References

International Standard	*Corresponding Indian Standard*
ISO 646-1983 Information processing — ISO 7-bit coded character set for information interchange	IS : 10315-1982 7-bit coded character set for information interchange (Technically equivalent)
ISO 1001-1979 Information processing — Magnetic tape labelling and file structure for information interchange	IS : 11419-1985 Magnetic tape labelling and file structure for information interchange (Identical)
ISO 1863-1976 Information processing — 9-track; 12,7 mm (0.5 in) wide tape for information interchange recorded at 32 rpmm (800 rpi)	IS : 11409-1986 Specification for 9-track, 12.7 mm wide magnetic tape recorded at 32 rpmm for information processing (Identical)

The Computers, Business Machines and Calculators Sectional Committee has reviewed the provisions of following ISO Standard and has decided that this is acceptable for use in conjunction with this standard :

ISO 1862-1975 Information processing 9 track, 12,7 mm (0.5 in) wide magnetic tape for information interchange recorded at 8 rpmm (200 rpi).

Adopted 15 January 1986	© March 1986, ISI	Gr 2

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the implementation of the 7-bit coded character set and its 7-bit and 8-bit extensions on 9-track 12,7 mm (0.5 in) magnetic tape.

2 REFERENCES

2.1 This International Standard refers to the 7-bit coded character set which is the subject of ISO 646, *7-bit coded character set for information processing interchange,* and ISO 2022, *Code extension techniques for use with the ISO 7-bit coded character set.*

2.2 The magnetic tape on which this character set is implemented is specified in the following ISO publications :

ISO/R 1862, *9-track 8 rpmm (200 rpi) magnetic tape for information interchange;*

ISO/R 1863, *9-track 32 rpmm (800 rpi) magnetic tape for information interchange;*

ISO . . ., *9-track 63 rpmm (1 600 rpi) phase-encoded magnetic tape for information interchange.*[1]

2.3 The magnetic labelling is the subject of ISO/R 1001, *Magnetic tape labelling and file structure for information interchange.*

3 DEFINITIONS

(The figure on page 3 illustrates the following definitions.)

3.1 magnetic tape : A tape which will accept and retain magnetic signals intended for input, output and storage purposes on computers and associated equipment.[2]

3.2 track : A longitudinal area on the tape along which a series of magnetic signals may be recorded.[2]

3.3 reference edge : The edge farthest from an observer, or nearest the top of a page, when a tape is lying flat with the oxide side uppermost and the direction of movement for recording from left to right.[2] (See figure.)

3.4 row : A transverse area on the tape along which magnetic signals of tracks are recorded.

3.5 block : A series of rows, limited by suitable marks, to be recorded and read as a group.

3.6 gap : A space left unused between blocks.

3.7 8 position environment : A set of eight positions, each available to record one bit.

4 SPECIFICATIONS

4.1 Track identification

There shall be 9 tracks on the tape and they shall be numbered consecutively from 1 to 9, with track 1 adjacent to the reference edge (see figure).

4.2 Data content

Each row contains one character only, with its parity check bit.

---

[1] At present at the stage of draft proposal.

[2] Definitions in accordance with ISO/R 1864, *Unrecorded magnetic tape for information interchange – 8 and 32 rpmm (200 and 800 rpi), NRZI, and 63 rpmm (1 600 rpi), phase-encoded.*

4.3 Constitution of data blocks[1]

All blocks for data interchange shall consist of not less than 18 data rows and not more than 2 048 data rows and, in addition, those checking characters and block framing characters as required by the relevant International Standard for recorded magnetic tape.

4.4 Error protection[1]

4.4.1 *Parity of data rows*

The parity track shall be track 4 and the bit recorded on that track will be chosen so that the number of ONE bits recorded on the same row is odd.

4.4.2 *Longitudinal check row*

This row is written at the end of a block and its content is such that the number of ONE bits recorded on the same track is even for the whole block with this longitudinal check row.

4.4.3 *Cyclic redundancy checking*[1]

4.5 Control blocks (Tape Mark)[1]

For the purpose of separating data, a control block, known as the Tape Mark, shall be allowed. The exact use of the Tape Mark is described in ISO/R 1001. The Tape Mark configuration is defined in the relevant ISO publications[1]. For certain recording modes, this block shall be accompanied by a longitudinal check row.

4.6 Representation of coded characters

4.6.1 *Sequence of coded characters*

Considering the recorded data as being in character form, the sequence of characters from the start towards the finish of a block shall correspond to the normal left-to-right sequence of a written line.

4.6.2 *Arrangement of 7-bit coded characters*

The relationship of the 7 bits to the 8 positions of the environment is as follows :

Bits of the 7-bit combination :	$\boxed{0}$	b_7	b_6	b_5	b_4	b_3	b_2	b_1
Position number of the environment :	8	7	6	5	4	3	2	1

$\boxed{0}$ is a high order bit with value ZERO

4.6.3 *Arrangement of 8-bit coded characters*

The relationship of the 8 bits to the 8 positions of the environment is as follows :

Bits of the 8-bit combination :	a_8	a_7	a_6	a_5	a_4	a_3	a_2	a_1
Position number of the environment :	8	7	6	5	4	3	2	1

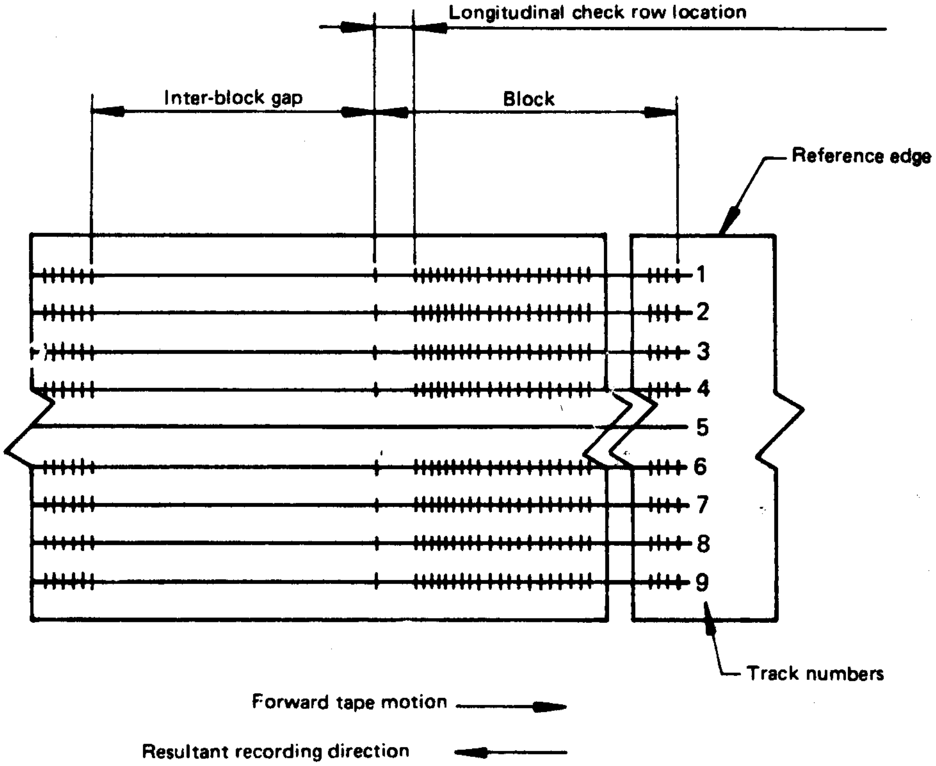
4.6.4 *Environment relationship to tracks*

The relationship of the 8 positions of the environment and of the parity bit to the 9 tracks of the tape is as follows :

Parity (P) and position number of the environment :	P	8	7	6	5	4	3	2	1
Track number :	4	7	6	5	3	9	1	8	2

---

[1] Block framing, error protection techniques and constitution of control blocks vary according to the recording mode and the packing density. See the documents referred to in 2.2.



NOTES

1 Tape is shown with oxide side towards observer.

2 Tape is shown representing bit ONE in all tracks.

FIGURE — **9-track magnetic tape**

Printed at Simco Printing Press, Delhi, India